AN/APR-39A (V)2 Radar Warning Receiver (RWR)

The APR-39A (V)2 Radar Warning Receiver (RWR) is intended to improve individual aircraft survival through improved aircrew situational awareness of the electromagnetic threat environment. The APR-39A (V)2 is a multi-Service (Navy/Marine Corps and Special Operations Force) next generation RWR upgrade to the existing APR-39A (V1). The upgraded system is intended for helicopters and other non-high performance aircraft. It is capable of detecting and providing alerts to the aircrew of surface to air missile and anti-aircraft artillery associated pulsed, pulsed Doppler, and continuous wave radar activities identified from a software programmable threat library. In addition to the cockpit video display, the APR-39A (V)2 provides the aircrew with synthetic speech audio threat warnings, facilitating a "hands on/heads up" aircrew posture. The system also integrates with other elements of the aircraft survivability equipment suite and, depending on aircraft configuration, provides control and display functions for the AVR-2/2A laser warning system family, the AAR-47 missile warning system, and the ALE-39 or ALE-47 countermeasures dispenser. The system retains the former APR-39A (V)1 low band vertically polarized blade antenna. The new, more sensitive, circularly polarized spiral antennas are a form and fit replacement for the previous equipment, as is the new night vision compatible cockpit video display and the cockpit control unit.

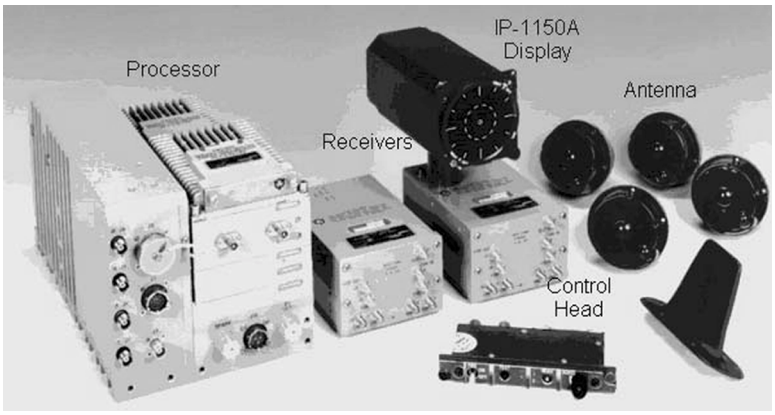
Early Navy operational testing in the Marine Corps AH-1W helicopter in FY91-92 found the system not operationally effective and potentially operationally suitable. Fleet introduction was not recommended until a subsequent operational evaluation could demonstrate satisfactory resolution of Operational Test-IIA performance deficiencies.

Operational Test-IIB in a Marine Corps UH-1N helicopter (in accordance with a DOT&E-approved Test and Evaluation Master Plan and test plan) was completed by the Commander, Operational Test and Evaluation Force (COMOPTEVFOR) in May 1995, with a finding of operationally effective and suitable and a recommendation for fleet introduction in the UH-1N. Involvement by the Operational Test community in the developmental test (DT) leading to this phase of operational test facilitated meaningful use of DT test results and allowed some streamlining of Operational Test-IIB. The Navy Milestone III was approved in FY96. APR –39A (V)2 systems are intended as the standard RWR for the UH-1N, AH-1, V-22, VH-60, HH-60, SH-60, CH-53, MH-53, KC-130, and the VH-3 aircraft.

TEST & EVALUATION ACTIVITY

Developmental flight-testing on the AH-1W and the HH-60H was completed in FY00. The Follow-on Test & Evaluation (FOT&E) on these platforms was completed in FY01 according to DOT&E approved test plans, and analysis of the results was completed during FY02.

The APR-39A(V)2, as integrated on the MV-22, was delivered to the government as Contractor Furnished Equipment. The Electronic Warfare suite, as installed and integrated, was tested as part of the MV-22 complete airframe Initial Operational Test & Evaluation in July 2000. Within the limited scope of these tests, the APR-39A (V)2 was effective and suitable. Plans to conduct FOT&E in the HH-53 are now uncertain due to funding shortfalls, and FOT&E in the KC-130 has been postponed indefinitely due to problems observed during DT on that platform.



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TEST & EVALUATION ASSESSMENT

The APR-39A(V)2 is undergoing a multi-platform test and evaluation program, which encompasses several platforms undergoing unique phases of their acquisition life-cycle. FOT&E has been conducted on two platforms, the AH-1W and the HH-60H. Data collected

and evaluated from these tests will be used in determining whether the systems should be deployed and to serve the Program Manager in executing follow-on contract award options for additional units.

Based on the results of the AH-1W and HH-60H testing, COMOPTEVFOR has evaluated the APR-39A(V)2 as installed in those aircraft as operationally effective and suitable. DOT&E's independent analysis of the results highlighted an additional concern with the poor direction of arrival accuracy, which has been well known for several years, and was previously accepted by the user. The Program Manager has initiated efforts to correct some of the performance deficiencies noted. A verification of correction of deficiencies test is scheduled for FY03. This test is to show that changes to the software program have improved detection/identification and reaction time performance. The effectiveness of these corrections should be tested and evaluated and each follow-on platform should plan on testing the integrated system's operational effectiveness and suitability and perform an assessment comparing the upgraded performance against what is currently fielded.